

12. (Twice amended) [Nucleic acid probes] A DNA segment having specific binding affinity for at least a part of a gene or nucleic acid derivative thereof wherein said segment comprises [having at least 15 contiguous nucleotides of or at least 30 contiguous nucleotides with at least 60% homology of] the following sequence:

GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTCAACACACAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG.

13. (Twice amended) A test kit for detecting genetic abnormalities [related to a gene in humans] comprising a container means having disposed therewithin the DNA segment according to claim 12 [having at least in part the following sequence:

GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGSGC

~~TGGAGTCCATTCTCCGCCGGCGGTTACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTGGGAGGGGTGGGTGAGGAGCCATGG, said kit comprising containers
containing at least one specific nucleic acid probe of Claim 12
and instructions for performing test with said probe].~~

14. (Twice amended) A method of diagnosing human cancer
related to a gene having at least in part the following
nucleotide sequence:

GTCTACATGGGTGCTTCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTGGGAGGGGTGGGTGAGGAGCCATGG comprising:

[(a)] detecting amplification rearrangement or over-
expression of the gene by hybridizing nucleic acid derived from a
tissue sample of a human suspected of having said cancer with the
[nucleic acid probes] DNA segment of claim 12.

~~18. (Amended) A recombinant DNA molecule comprising the
DNA segment according to claim 12 and a vector [containing a
nucleic acid sequence of claim 16].~~

Claim 19, line 1, delete "of claim 18".

20. (Amended) The DNA molecule according to claim 18,
wherein said [A] vector [of claim 18 which] is a plasmid.

21. (Amended) A composition of matter comprising at
least one [nucleic acid] DNA segment defined by claim 12 [16] in
a carrier.

Claim 22, line 2, change "nucleic acid" to
--DNA segment--.

23. (Amended) A composition of matter comprising a DNA
segment complementary to the DNA segment according to claim 12 in
a carrier [claim 21 wherein the nucleic acid is DNA complementary
to mRNA (cDNA).].

24. (Amended) The [A] composition according to claim 22,
wherein the DNA segment is labeled with a radioactive isotope.

25. (Amended) The [A] composition according to [of] claim
24, wherein said radioactive isotope [the label] is ³²P.

26. (Amended) A method of evaluating human cancer in a patient [related to the gene of Claim 16] comprising [the steps of]:

- 1) obtaining a tissue sample from the patient;
- 2) [exposing] contacting the tissue sample with [to] a [composition] DNA segment of claim [21] 12 to allow hybridization to occur; and
- 3) inspecting the [exposed] tissue sample from step 2 for evidence of hybridization reaction.

Claim 29, line 1, change "28" to --26--.

Kindly add new claims 34-43.

--34. A purified DNA segment encoding a gene wherein said gene comprises the sequence:

GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACAGACTTCGGGCT
GGCTCGGCTCTGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG, or allelic or species
variation thereof.

35. The DNA segment according to claim 34, wherein said gene comprises the sequence:

GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG.

36. A DNA segment complimentary to the DNA segment of claim 34.

37. A cDNA that comprises a DNA segment according to claim 34.

38. A test kit for detecting genetic abnormalities comprising a container means having disposed therewithin the DNA segment according to claim 34.

39. A recombinant DNA molecule comprising the DNA segment according to claim 34 and a vector.

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40. A method of diagnosing human cancer related to a gene having at least in part the following nucleotide sequence:
GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG comprising:

detecting amplification rearrangement or over-expression of the gene by hybridizing nucleic acid derived from a tissue sample of a human suspected of having said cancer with the DNA segment of claim 34.

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41. A method of evaluating human cancer in a patient comprising:

- 1) obtaining a tissue sample from the patient;
- 2) contacting the tissue sample with a DNA segment of claim 34 to allow hybridization to occur; and
- 3) inspecting the tissue sample from step 2 for evidence of hybridization reaction.

42. A purified DNA segment having specific binding affinity for a gene wherein said gene comprises the sequence:
GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG, or allelic or species variation thereof, and wherein said segment comprises at least 24 contiguous nucleotides of said gene.

43. A purified DNA segment having specific binding affinity for a gene wherein said gene comprises the sequence:
GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG, or allelic or species variation thereof, and wherein said segment comprises at least 40 contiguous nucleotides of said gene.--